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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,569	03/01/2004	Takashi Ueno	04104CIP/HG	3119
1933 7590 03/17/2010 FRISHAUF, HOLTZ, GOODMAN & CHICK, PC 220 Fifth Avenue 16TH Floor NEW YORK, NY 10001-7708				
EXAMINER				
IP, SIKYIN				
ART UNIT		PAPER NUMBER		
1793				
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03/17/2010		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/791,569

Applicant(s)

UENO, TAKASHI

Examiner

Sikyin Ip

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) 1,3-8,10-17,19-44 and 46 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,9,18,45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/06)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2, 9, 18, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chu et al.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over USP 4818283 to Grunthaler et al or Xiao et al.

Grunthaler discloses the features including the claimed Cu-Mo alloy (col. 1, lines 60-65) and electrode application, commutator segments and contacts (col. 4, lines 4-9). Xiao discloses the features including the claimed Cu-Mo alloy and film application (page 354, Results and Discussion, lines 1-2). Chu discloses the features including the claimed Cu-Mo alloy (paragraph bridging pages 6462-6463 and Figure 11, section E in page 6467) and electrode application (page 6462, Introduction). The recited limitation "Mo is mixed in a grain boundary of the Cu" reads on uniform dispersion of Mo in Cu matrix including grain boundaries. Since structure of claimed "sputtering target", "electronic device", or "electronic optical component" has not been defined, which is read on the products disclosed by cited references. Therefore, when prior art compounds essentially "bracketing" the claimed compounds in structural similarity are all known, one of ordinary skill in the art would clearly be motivated to make those claimed compounds in searching for new products in the expectation that compounds similar in structure will have similar properties. In re Gyurik, 596 F.2d 1012, 1018, 201 USPQ 552, 557 (CCPA 1979); See In re May, 574 F.2d 1082, 1094, 197 USPQ 601, 611 (CCPA 1978) and In re Hoch, 57 CCPA 1292, 1296, 428 F.2d 1341, 1344, 166 USPQ 406, 409 (1970). As stated in In re Peterson, 315 F.3d 1325, 1329-30, 65 USPQ2d 1379, 1382 (Fed. Cir. 2003), that "A prima facie case of obviousness typically exists when the ranges of a claimed composition overlap the ranges disclosed in the prior art". Therefore, it would have been obvious to one of ordinary skill in the art to select any portion of range, including the claimed range, from the broader range disclosed in a prior art reference because the prior art reference finds that the prior art

composition in the entire disclosed range has a suitable utility. Also see MPEP § 2131.03 and § 2123.

With respect to the processing steps in the claims that the invention defined in a product-by-process claim is a product, not a process. In *re* Bridgeford, 357 F. 2d 679, 149 USPQ 55 (CCPA 1966) and MPEP § 2113. It is the patentability of the product claimed and not of the recited process steps which must be established. See In *re* Brown, 459 F. 2d 531, 173 USPQ 685 (CCPA 1972). The guidance that has been provided by court on this matter is

[i]f the product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.

See In *re* Thorpe, 777 F.2d 695, 227 USPQ 964, 966 (Fed. Cir. 1985). When applicant's and prior art's products are to be identical or substantially identical, the burden shifts to applicant to provide evidence that the prior art product does not inherently possess the claimed properties. In *re* Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977); In *re* Fessmann, 489 F.2d 742, 745 180 USPQ 324, 326 (CCPA 1974); and In *re* Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980).

Claims 9, 18, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over USP 4818283 to Grunthaler et al or Xiao et al in view of Chu et al.

Grunthaler discloses the features including the claimed Cu-Mo alloy (col. 1, lines 60-65) and electrode application, commutator segments and contacts (col. 4, lines 4-9). Xiao discloses the features including the claimed Cu-Mo alloy and film application (page

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354, Results and Discussion, lines 1-2). Grunthaler and Xiao do not disclose instant claimed electrical resistance. Chu discloses that annealed Cu-Mo alloy substantially same as Cu-Mo alloys of Grunthaler and Xiao would have electrical resistance in claimed range (Chu, Figure 11). Therefore, it is contemplated within ambit of ordinary skill artisan to anneal the Cu-Mo alloy in order to reduce electrical resistance of said alloy.

Claims 2, 9, 18, and 45 are further rejected under 35 U.S.C. 103(a) as being unpatentable over acknowledged prior art admission in view of Chu et al.

Acknowledged prior art admission discloses

~~4a~~ conventionally-used electronic devices and electronic components, wiring patterns and electrodes are formed by using a pure metallic material, such as Cu, Al, Ti, Mo, Ta, W and Cr, or a metallic alloy material, such as Al-Cu, Al-Cu-Si, Al-Pd, TaSi, WSi and TiN, as a material for wiring patterns, electrodes and contacts. " except for the Cu-Mo alloy metallic

contact. Chu discloses the features including the claimed Cu-Mo alloy (paragraph bridging pages 6462-6463) and electrode application (page 6462, Introduction and Figure 11). The use of conventional materials to perform their known functions in a conventional process is obvious. In re Raner, 134 USPQ 343 (CCPA 1962).

With respect to the processing steps in the claims that the invention defined in a product-by-process claim is a product, not a process. In re Bridgeford, 357 F. 2d 679, 149 USPQ 55 (CCPA 1966) and MPEP § 2113.

Response to Arguments

Applicant's arguments filed September 16, 2009 have been fully considered but they are not persuasive.

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Chu et al. and Xian et al. do not teach or suggest the feature of applicants' present claims that "the Mo is mixed in a

Applicant argues that "grain boundary of the Cu." "

But, the recited limitation "Mo is mixed in a grain boundary of the Cu" reads on uniform dispersion of Mo in Cu matrix including grain boundaries.

Applicant's argument with respect to Grunthaler is noted. But applicant failed to provide factual evidence to substantiate his position that Mo cannot be dispersed to grain boundary.

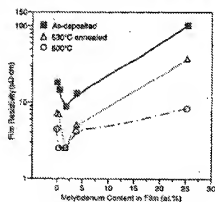
Grunthaler et al. , Chu et al. and Xian et al. do not teach or suggest the feature that a metallic material has an electrical resistance higher than $1.5 \mu \Omega \text{ cm}$ and lower than $3 \mu \Omega \text{ cm}$, as

Applicant argues that " recited in applicants' present claims 9, 16 and 1b. "

But, applicant's attention is directed to Figure 11 of Chu below:

2. Electrical and hardness properties

The electrical resistivity results shown in Fig. 11 are obtained from Cu-Mo films in as-deposited and annealed conditions. The resistivities of the as-deposited Cu-Mo films



Conclusion

All recited limitations in the instant claims have been met by the rejections as set forth above.

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Applicant is reminded that when amendment and/or revision is required, applicant should therefore specifically point out the support for any amendments made to the disclosure. See 37 C.F.R. § 1.121; 37 C.F.R. Part §41.37 (c)(1)(v); MPEP §714.02; and MPEP §2411.01(B).

Examiner Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Ip whose telephone number is (571) 272-1241. The examiner can normally be reached on Monday to Thursday from 5:30 A.M. to 4:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Roy V. King, can be reached on (571)-272-1244.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sikyin Ip/
Primary Examiner, Art Unit 1793

March 14, 2010